

1086-97-2174 **Jazlynn Q Ngo*** (jazziengo@gmail.com). *Triangular modulation of downstream surface waves of water flows over a bump.*

The forced Korteweg-De Vries is used to model surface waves of water flows over a bump. The fKdV has four known types of solutions depending on the upstream current speed λ and the size of the bump P : sub-critical cnoidal waves, a hydraulic fall, transcritical waves and supercritical solitary waves. This paper will focus on the analysis of the downstream cnoidal wave modulation. The wave modulation varies according the control parameters λ and P . We will explore the range these parameters that are required for the downstream surface waves of water flows to form a triangular modulation. In particular, we will provide an approximate analytic description of the triangular modulation of the downstream cnoidal waves. The analytic solutions will be validated by numerical solutions. (Received September 25, 2012)